R E M A R K S

Reconsideration of this application, as amended, is respectfully requested.

THE CLAIMS

Claims 1, 2, 9, 10, 17 and 18 have been amended to make some minor <u>clarifying</u> amendments to more clearly recite the distinguishing features of the present invention so as to put the claims in better form for issuance in a U.S. patent.

No new matter has been added, and no new issues have been raised which require further consideration on the merits and/or a new search. Accordingly, since the amendments are clarifying in nature, it is respectfully requested that the amendments to the claims be approved and entered under 37 CFR 1.116.

THE PRIOR ART REJECTION

Claims 1-5, 7, 9-13, 15, 17-21 and 23 were again rejected by Examiner Makhdoom under 35 USC 102 as being anticipated by USP 5,313,398 ("Rohrer et al"), and claims 6, 8, 14, 16, 22 and 24 were again rejected by Examiner Makhdoom under 35 USC 103 as being obvious in view of the combination of Rohrer et al and USP 6,271,579 ("Going et al"). These rejections, however, are again respectfully traversed.

As can be understood from the formula set forth in columns 9 and 10 of Rohrer et al, this reference applies Ohm's law to the

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relationships between circuit nodes and circuit elements. That is, in Rohrer et al, the simultaneous equation of VG = I (where V is a voltage, G is a conductance and I is a current) is applied to the relationships. By solving the simultaneous equations, the voltage and current values at each node are obtained. Accordingly, it is respectfully submitted that Rohrer et al discloses nothing but a traditional technology.

By contrast, the claimed present invention does not merely solve equations set up for a circuit - instead, the claimed present invention regards a circuit as a particle model system and examines a state of particles by performing particle simulation based on that system.

Before proceeding to specifically describe the patentably distinguishing features of the present invention, it is noted that to express circuit elements in the form of a particle model, the present invention regards voltage as the density of particles in a connection pipe and current as the mobility of the particles per unit time, and that the electric functions of circuit elements are expressed as those of element cells. For example, the function of a voltage source is expressed as the number of particles generated, the function of a current source is expressed as the number of particles that have moved, and the function of a resistor is expressed as a resistance against which particles pass.

The claimed present invention as recited in each of the independent claims includes a transfer step (or means) which transfers particles between an element cell and a connection pipe on the basis of a rule or rules determined by a setting step (or means). In particular, as recited in the amended claims, the transfer process is executed for all element cells in units of one element cell.

The claimed present invention also includes an updating step (or means) which updates both the number of particles passing through each connection pipe per unit of time and the number of particles present in each connection pipe. In this connection, it is noted that where the transfer step is executed for all element cells, the particles in the entire circuit may not be in a balanced state.

To solve this problem, the claimed present invention further provides a simulation step (or means) which repeatedly executes the transfer and updating process until the state of particles in each pipe becomes stable - i.e., until the updated number of particles passing through each connection pipe per unit time and the number of particles present in each connection pipe converge, as recited in the amended claims.

It should be noted that the claimed present invention does not set up a large number of simultaneous equations based on Ohm's law, nor does the claimed present invention obtain a solution of such simultaneous equations.

In the simulation step of the claimed present invention, the state of particles in each connection pipe at a given time can be determined. On this basis, the claimed present invention makes it possible to estimate the operating condition of the circuit.

It is respectfully submitted that Rohrer et al does not at all disclose, teach or suggest the feature of the transfer step (or means) as recited in the clarified amended claims which transfers particles between an element cell and a connection pipe, and that Rohrer et al also fails to disclose, teach or suggest the feature of the simulation step (or means) as recited in the clarified amended claims which simulates the state of the particles.

Instead, as pointed out hereinabove, Rohrer et al merely solves simultaneous equations set up based on Ohm's law and is therefore based on completely different technology. And in this connection, it is again respectfully pointed out that the method of Rohrer et al is not suitable for analyzing a large-scale circuit.

In summary, it is respectfully submitted that Rohrer et al fails to disclose, teach or suggest the specifically claimed features of the transfer and simulation steps (or means) which are specifically recited in amended claims 1, 2, 9, 10, 17 and 18, and that the amended independent claims as well as each of claims 3-8, 11-16 and 19-24 depending therefrom all patentably

distinguish over Rohrer et al, taken singly or in combination
with Going et al, under 35 USC 102 as well as under 35 USC 103.

* *

In view of the foregoing, entry of this Amendment, allowance
of the claims and the passing of this application to issue are
respectfully solicited.

If the Examiner has any comments, questions, objections or
recommendations, the Examiner is invited to telephone the
undersigned at the telephone number given below for prompt
action.

Respectfully submitted,

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